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INTER - OFFICE CORRESPONDENCE

Richmond, Virginia

To: Dr. A. C. Lilly

Date: February 16, 1990

From: R. P. Heretick

Subject: PROJECT AMBROSIA

Objective: Develop new products which provide a socially acceptable benefit for the consumer. This program is directed toward improvements in the social acceptability of room aroma, ashtray aroma, and clothing aroma.

Strategies:

- I. Develop new cigarette products which exhibit a distinctive sidestream aroma.

This development incorporates two product objectives which utilize the same tactics. These tactics involve the evaluation of commercially available aroma release materials and the development of new aroma release materials. Once acceptable materials are available they are incorporated into the cigarette design by coating the cigarette paper or in a reformulation of the cigarette sidestream adhesive.

- o Develop an acceptable product to compete with Chelsea.

1st Quarter

- o Develop cigarette prototypes which exhibit a range of distinctive sidestream aromas.

1st Quarter

- o Continue the development and optimization of distinctive aroma systems based on initial consumer research with these distinctive products..

3rd Quarter

- II. Develop new cigarette products which exhibit a neutral sidestream aroma and which also incorporate reduced sidestream visibility.

- o Initial prototypes utilizing Aromatek 245

2nd Quarter

- o Blend component sidestream aroma evaluation

2nd Quarter

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- o Investigations by Analytical Research and Chemical Research designed to understand the aroma developed by cigarette sidestream smoke.

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- o New prototype design will include information gained in previous evaluations.
 1. Selection of aroma release materials to achieve neutral sidestream aroma
 2. Blend development with information gained from the component evaluation
 3. Evaluation of prototype designs and blend development which will lead to the objective of reduced sidestream aroma with minimal effect on mainstream subjective response

2nd Quarter

III. Investigations in conjunction with Analytical Research and Chemical Research designed to better understand the aroma developed by cigarette sidestream smoke.

- o Commercialization of CR2898

1st Quarter

- o Evaluation of sidestream smoke of selected cigarettes which exhibit differences in aroma.

2nd - 3rd Quarter

- o Continue the experimental design and evaluation

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Ashtray Odor

Objective: To eliminate or reduce ashtray odor

- I. Identify and screen compounds for their potential utility in reducing, eliminating or improving ashtray odor. Initial screening would consist of: 1) smelling the compound in the presence of cigarette butts by a few "expert noses" (e.g., C. Hayes, F. Gullotta, R. Southwick, etc.), and if desirable differences are observed, 2) placing the compound both individually and in combination with cigarette butts on the odor profiling panel for evaluation.
 1. Review the odor profiling data from all of the ashtray-related test samples that have been profiled to date (approximately 50) and determine if any are worthy of further evaluation. (Complete 1st Quarter)
 2. Evaluate cigarette butt aroma in the presence of different concentrations of l-carvone. (Complete 1st Quarter)
 3. Evaluate cigarette butt aroma in the presence of zinc ricinoleate. (Awaiting the arrival of the "pure" compound from T. Sanders. Once the compound is obtained, initial screening should be completed in two weeks with the odor profiling of the compound expected to be completed in a month).
 4. Evaluate other mint-like compounds (e.g., menthone, d-menthol, methyl salicylate) for their ability to modify ashtray odor. (Complete 2nd Quarter)
- II. Convene a panel to subjectively evaluate promising compounds. The panel will consist of approximately ten-twenty people and will be convened once an adequate number of compounds or concentrations of a compound have been screened. A paired comparison testing procedure will be employed to compare treated (cigarette butts in the presence of a compound) vs untreated (control) cigarette butts. Samples will be evaluated for butt odor, other odor, and degree of difference and preference using a 7-point scale. (Once convened, complete panel testing in one month. Continuation of panel possible as additional compounds are identified).
- III. Explore the possibility of adding to cigarettes those compounds that appear to significantly modify ashtray odor.

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Resource Allocations

The current and projected resource allocation is shown below:

Cigarette Development

Project Leader	0.5
Product Development Engineer	1.0

Flavor Development

Scientist	1.0
Chemical Research	1.5
Biochemical Research	.25

Other Resources Required

Analytical Research
Cigarette Technology
Semiworks
CTSD
PED



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